Air Quality Program

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Program Mission

Protect, preserve, and enhance the air quality of Washington to safeguard public health and the environment and support high quality of life for current and future generations.

Environmental Threats

Air quality concerns come in three forms: public health, environmental effects, and quality of life.

Air pollution causes lung disease, worsens existing respiratory and cardiopulmonary disease, increases chronic respiratory illness and the likelihood of contracting cancer, and decreases lung function in children – predisposing them to chronic obstructive pulmonary disease as adults. Air pollution can hasten death for people afflicted with such diseases. Hundreds of studies have found that short- and long-term exposures to air pollution at levels currently found in Washington increase emergency room visits, hospitalizations, and medication use; cause absences from school and work; and restrict activity for some people.

Air pollution also affects the environment and quality of life in other ways, including: damage to soils, water, crops, vegetation, manmade materials, property, animals, and wildlife; impaired visibility; and climate and weather. When air pollution creates noxious odors or irritating fumes, it can harm the economic value of homes and other types of real estate, as well as personal comfort and well-being.

Since the Washington State Legislature expanded statewide air quality protection in 1991, overall air quality in Washington has greatly improved. Washington citizens realize economic and health care savings of almost $2 billion per year related to cleaner air. But even with current efforts to protect air quality, hundreds of people die each year from exposure to fine-particle pollution in Washington.

Over ten years ago, 13 areas of Washington were designated as violating national ambient, health-based air quality standards for six chemicals known as “criteria” pollutants. More than three million people lived within these areas and were exposed to high pollution levels. Since then, federal, state, and local efforts have returned all 13 of those areas to compliance with federal air quality standards. However, air quality in Washington continues to be a health concern. Since 2001, levels of ground-level ozone have been increasing around the state as growth overtakes current strategies to control air pollution. Monitoring studies show the potential for new violations of air quality standards in several areas, such as Colville and parts of the Columbia plateau. Although all areas of the state meet federal standards today, a number of areas are close to violation levels.

In addition to the six federal criteria pollutants, hundreds of other chemicals, known as toxic or hazardous air pollutants, enter the atmosphere from a wide variety of sources. These chemicals are not currently subject to health-based standards. However, studies are increasingly identifying them as significant health risks. Chief among these are the toxic particles and chemicals emitted from vehicles, diesel engines, and wood burning. These pollutants are not only emitted to the air and breathed by citizens, but also are deposited to the land and waters of the state, contributing to overall toxic pollution in the environment. Addressing sources of toxic air pollutants is part of a broad agency initiative to reduce toxic pollution throughout the state.

Authorizing Laws

- *Federal Clean Air Act*
- *Chapter 70.94 RCW, Clean Air Act*
- *Chapter 70.120 RCW, Motor Vehicle Emission Control*

Constituents/Interested Parties

- *Motorists, transportation agencies, and motor vehicle related businesses*
- *Business, industry, and affiliated trade associations*
- *Wood Stove and fireplace users, Manufacturers, and related businesses such as dealers*
- *Agricultural businesses*
- *General public*

Major Activities and Results

Prevent Unhealthy Air and Violations of Air Quality Standards

Federal law establishes air quality standards for six air pollutants known as criteria pollutants. Violations of standards trigger costly regulatory actions, impose economic constraints, and create the potential for severe financial sanctions against the state if problem areas are not effectively cleaned up in a timely manner. To ensure standards and public health objectives are met, the agency continuously measures air pollution levels and trends. The agency develops and implements area-specific cleanup plans, designs and implements customized strategies to prevent violations of federal standards, and develops and implements natural event action plans to minimize health impacts. The agency works to ensure that wildfires, windblown dust, or other natural events do not place Washington in violation of federal standards.

As an ongoing part of assuring healthy air quality levels, the agency is conducting a statewide assessment of communities for fine particle pollution. This assessment will prioritize actions for those areas where air quality is a health concern and where there is potential or likelihood of violating air quality standards.

The agency's goals are to substantially reduce health impacts to the public and prevent violations of national ambient air quality standards. (Authorizing laws - Federal Clean Air Act, 70.94, and 70.120 RCW)

Result

Air quality standards in Washington State are met, public health problems associated with unsafe air are minimized, and federal sanctions are avoided.

- Disease rates and/or health costs attributable to air pollution are known and reported regularly.
- Measured air quality is at levels considered protective of public health.
- No violations of ambient air quality standards are measured.
- All areas of the state retain clean air status as classified and officially recognized by the Environmental Protection Agency.

Reduce Health and Environmental Threats from Motor Vehicle Emissions

Mobile sources such as cars, trucks, construction equipment, locomotives, and marine vessels are responsible for over 75% of Washington's air pollution. Regional growth continues to increase pollution from these sources. These emissions have been shown to adversely affect public health, substantially add to health care costs, and increase cancer and mortality rates. A recent agency study also indicates that emissions from vehicles are a major source of pollution in Puget Sound. Continued emission reductions from these sources are essential to prevent or reduce harmful health effects to citizens and to reasonably assure future attainment of federal air quality standards.

Motor vehicles are the major source of pollution in Puget Sound

In 2005, the state Legislature adopted ESHB 1397 to require cleaner vehicles, beginning with the 2009 model year. To protect public health and the environment from motor vehicle pollution, the agency also implements several pollution-reduction strategies: a cost-effective vehicle emission check program covering nearly two million cars and trucks; promotion of transportation alternatives and cleaner motor vehicles and fuels through voluntary, regulatory, and incentive programs; and the retrofitting school buses and publicly-owned fleets with diesel emission controls. (Authorizing laws - Federal Clean Air Act, 70.94, and 70.120 RCW)

Result

Motor vehicle emissions are minimized and managed, public health impacts from motor vehicle emissions are addressed, and federal sanctions for failure to meet standards are avoided.

- Develop rules to implement the Washington Clean Car program beginning with the 2009 model year.
- Reduce emissions from motor vehicles 40% by 2010.
- Reduce diesel soot emissions 50% by 2010.
- Equip 5,000 school buses with additional diesel emission controls by July 2007.
- Equip 1,000 publicly-owned vehicles and construction fleets with additional diesel emission controls by July 2007.
- Implement a cost-effective motor vehicle emission check program that substantially reduces air pollution from cars and trucks.
- Develop a comprehensive diesel emissions reduction initiative that combines voluntary and regulatory elements to significantly reduce cancer and other health risks.
- Partner with state, federal, and local agencies and the private sector to promote retrofit emission technology on fleets, transportation alternatives, the use of cleaner motor vehicles and fuels, and reduction of idling.

Reduce Risk from Toxic Air Pollutants

Hundreds of toxic chemicals (totaling millions of pounds) are emitted into the air each year in Washington. No ambient standards and few emission limits have been established for these compounds. Recent studies suggest that the most health-damaging air pollutants are those that are the products of combustion from engines and other types of burning. These toxic pollutants are breathed deeply into the lungs and may pass into the cardiovascular system. Soot from diesel engines and from indoor and outdoor burning are the top sources of toxic air pollutants in Washington. This soot is a composite of hundreds of toxic chemicals, including benzene, formaldehyde, 1-3 butadiene, and polyaromatic hydrocarbons (PAHs), to name a few.

Air toxics in Washington are responsible for increases in cancer rates, premature deaths, and heart attacks and disease. In addition, air toxics contribute to tens of thousands of hospitalizations and doctor visits, increased medication use, and hundreds of thousands of lost work/restricted activity days each year. The economic costs for Washington resulting from these health impacts are roughly estimated at hundreds of millions to billions of dollars annually.

School buses are being retrofitted across the state to reduce toxic diesel emissions

The agency's goal is to significantly reduce potential risk to the public of cancer and other serious health effects caused by airborne toxics. The agency is implementing programs to reduce harmful emissions from diesel engines and wood smoke, and from indoor and outdoor burning. The agency collects and prepares annual air toxics emission inventories; operates air toxics monitoring sites; and limits toxic emissions through permit conditions for industrial and commercial facilities. (Authorizing laws - Federal Clean Air Act and 70.94 RCW)

Result

The public health threat from toxic air pollutants is reduced. Diesel soot is the highest priority air toxic in Washington. Work listed here and under the motor vehicle emission activity related to diesel emissions directly supports addressing this health issue.

- Total tons of air toxics emitted to the air decreased 5% by July 2007.
- 50% reduction in emissions of priority toxics from base year 2000 levels by 2010.
- Reduce diesel soot emissions 50% by 2010.
- Equip 5,000 school buses and 1,000 local government diesel vehicles with new emission controls by July 2007.
- Equip 1,000 publicly-owned vehicles and construction fleets with additional diesel emission controls by July 2007.
- Improve emissions inventories and understanding of ambient concentrations and sources of priority toxics.
- Initiate appropriate strategies, assistance efforts, and incentive programs to reduce emissions of priority toxics.

Reduce Health and Environmental Threats from Smoke

Nagging regional smoke pollution plagues many areas, primarily in Central and Eastern Washington, and affects public health and quality of life. To address these continuing problems, the agency conditions permits for agricultural burning, land clearing burning, fire training burning, and other outdoor burning where required by law. The agency produces daily burn forecasts using local air quality, weather, and burning demand information; responds to and resolves complaints related to smoke; provides technical assistance to manage and prevent outdoor burning impacts; and designs and delivers community-tailored woodstove education programs. Through technical assistance, research and demonstration projects, the agency fosters development and use of practical alternatives to burning and improved smoke management. The agency's goal is to achieve air quality levels in Eastern and Central Washington by 2010 that experts agree is sufficient to protect human health. (Authorizing law - 70.94 RCW)

Result

Public health threats from smoke are managed and minimized.

- Reduce emissions from cereal grain stubble burning by at least 50% by June 2006, using a 1998 baseline.
- Develop a revised agricultural burning rule.
- Continue to improve and streamline the outdoor burning permit and smoke management systems.
- Audit local burn permit programs to ensure effective and efficient operation.
- Continue education and control strategies to reduce pollution from woodstoves.
- Foster development and use of practical alternatives and best management practices for burning and dust mitigation through research, technical assistance, and demonstration projects.

Reduce Air Pollution from Industrial and Commercial Sources

The agency issues permits to new and existing industrial and commercial facilities that emit significant levels of air pollution. Permit programs are mandated either by federal or state clean air law and are designed to be self supporting through fees. Permits are conditioned and approved to ensure all federal and state laws are met, and that air quality, the environment, and public health are protected. In addition to permit approvals, the agency provides technical assistance to businesses on permit application and processing guidance, interpretation of rules, pre-application assistance, and permit review.

The agency also develops and modifies industrial source regulations to incorporate federal and state law changes; simplifies and streamlines permit requirements, while ensuring public health protection; conducts compliance inspections and responds to and resolves complaints; and develops technical and policy direction on emerging industrial permit issues.

Consistent with the agency's overall goal to simplify and streamline permit processes and requirements through its regulatory improvement initiative, the Department of Ecology is pursuing innovative ways to improve permit processes. The agency is adopting general orders for less-complex business operations that do not require customized permits; publishing permit processes, instructions and approved permits on-line; pursuing e-permit processes (application, payment and compliance reporting over the Internet); and institutionalizing customer feedback mechanisms on permit processes. The agency hopes to make the permit process faster and more predictable for applicants. (Authorizing laws - Federal Clean Air Act and 70.94 RCW)

Air Monitoring equipment on top of a building in Kennewick

Reducing air pollution from industrial sources

Result
Air pollution from industrial and commercial sources are managed to protect public health and minimize costs and regulatory burdens.

- Reduce or prevent air emissions through permit conditions.
- Ensure 100% of permits meet timeliness targets.
- Improve turnaround time for permits.
- Provide certainty to the regulated community on the content, need and timeframes for permits.
- Retain delegation and local control of federal permit programs.

Measure Air Pollution Levels and Emissions
The agency needs sufficient, high quality information on the amount and sources of pollution and how it moves in the air to make reasoned air quality management decisions. The agency carries out three primary activities to collect needed data.

Air quality monitoring: The status of air quality is measured to provide data that allows assessment of trends, compliance, control strategies, health effects, and environmental damage.

Emission inventory development: Emission inventory is the quantification of the amount of pollution released by sources of air pollution.

Meteorological & modeling forecasts: Meteorological forecasting and dispersion modeling are essential to understanding the movement and concentration of air pollutants, the carrying capacity of airsheds, the interactions of pollutants, and the point of maximum impact of pollution. (Authorizing Laws - Federal Clean Air Act and 70.94 RCW)

Result
Accurate and comprehensive air quality data is gathered, maintained, and evaluated over time to ensure informed policy decisions can be made.

- Conduct annual network review and modifications to meet air quality needs.
- No person is exposed to air that violates federal quality standards.
- Air pollution is routinely measured where at least 85% of the population lives.
- Assure adequate data in both quantity and quality are available to policy makers.
- Actively participate in the regional consortium for air quality forecast modeling.
- Continually update and improve emissions data and modeling tools to predict air quality levels, impacts, and trends.
- Participate in region-wide, transboundary efforts to characterize air quality patterns.
- Provide support of ambient air monitoring sites in cooperation with partner agencies.

Major Issues

Healthier Air to Breathe
A growing number of U.S. and international health studies have linked some types of air pollution at levels much lower than previously believed to be safe to detrimental health effects. These studies demonstrate that the national ambient air quality standards, particularly for ground-level ozone (smog) and fine particles, are not fully protective of public health. Levels of ozone and particulate air pollution in Washington comply with the national standards but are at levels where detrimental health effects are observed and, therefore, some of the state's population is at risk. Many people, especially vulnerable populations such as children, the elderly, and certain health-compromised people, are more at risk of disease and death from air pollution than previously thought. High health care and economic costs can be reduced by continuing to reduce air pollution levels.

Growth Threatens Air Quality Gains
Even though all areas of Washington State are in compliance with federal air quality standards today, air pollution levels in a number of Washington communities are within 10 percent of federal standards for smog (also known as ozone), carbon monoxide, and fine particles. Since 2001, trends in ozone levels across the state have been

increasing. Population growth associated emissions, like trends in per capita car ownership and increasing vehicle size, are pushing emissions of air pollutants higher. It will take vigilance and the combined efforts of citizens, businesses, and governments to keep and sustain our air quality gains.

Reducing Diesel Soot

The agency has determined that soot from diesel engines is the greatest toxic health threat from air to Washington citizens. The Legislature has provided funding to the agency and the state's seven local air agencies to place emission controls on existing diesel school buses and other publicly-owned diesel fleets. The goals are to significantly reduce air pollution and public health risk to children and adults from emissions from school buses and other diesel equipment; to maximize cost effectiveness and efficiency in use of appropriated dollars; and to sustain or increase private sector employment. More than 3,000 school buses have been retrofitted to date, and the agency anticipates that 5,000 school buses and 1,000 diesel engines operated by local government will be retrofitted by the close of the 2005-07 biennium. These retrofits will result in a reduction of more than 60 tons of toxic air pollutants each year, with significant health care and economic savings in Washington.

Outdoor Burning

Burning of household trash, yard waste, and agricultural debris is a frequent occurrence in many areas of Washington. Our clean-air law governs where and what burning is allowed. The regulations implementing the law call for changes in burning practices and prohibitions in January 2007. The trend toward tighter restrictions on burning produces conflicts in situations where the pressure or desire to burn is strong. In fact, the pressure to burn is increasing on many fronts, such as the fluctuation in demand for burning to remove agricultural and horticultural debris. Intentional burning in forests is likely to increase as a part of restoring the health of forests, and back yard burning to reduce yard waste is a common practice in some rural communities. At the same time, pressure to reduce burning is also increasing. People don't like to be "smoked-out," and are demanding clean air. Wood smoke significantly impacts public health, and the Department of Ecology has determined that wood smoke poses the second greatest toxic air risk.

Fire safety professionals also have increasing concerns about fires getting out of control. The agency predicts that the pattern of frequent changes in burning programs will continue as state and local agencies struggle to find the balance between clean air, reasonable alternatives to burning, and necessary burning.

Visibility and Regional Haze

Citizens complain when their view of Mt. Rainier, the Olympics, or the Columbia Gorge are obstructed by air pollution. Federal law requires the state to eliminate human-caused visibility impairment in our national parks and wilderness areas by 2064. Businesses, governments, and citizens who have partially controlled air emissions to protect public health may have to further reduce emissions if they are found to contribute to the degradation of scenic views in these national landmark areas.

Clear visibility of scenic mountain

Because budget cuts have eliminated the state's work to reduce regional haze, future decisions related to visibility protection will be made by the U.S. Environmental Protection Agency. A federally imposed implementation plan to achieve and maintain visibility may not be in the state's best economic or pollution-management interests. Future state involvement in regulating regional haze may be desirable.

Responding to Climate Change

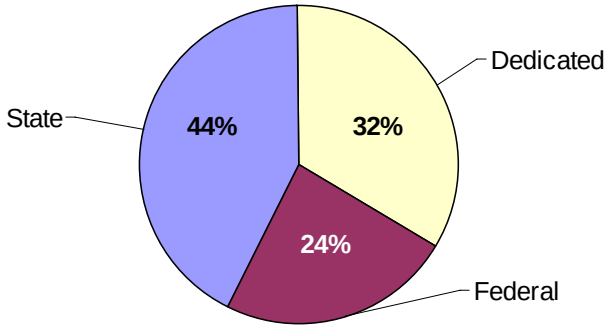
The agency is expecting to assist with design and implementation of a West Coast global warming and clean energy strategy. Potential areas for agency involvement include marine vessel and truck-stop idling reduction strategies, increasing fuel efficiency of the state vehicle fleet, and improving inventories of greenhouse gas emissions.

Air Quality Program Budget

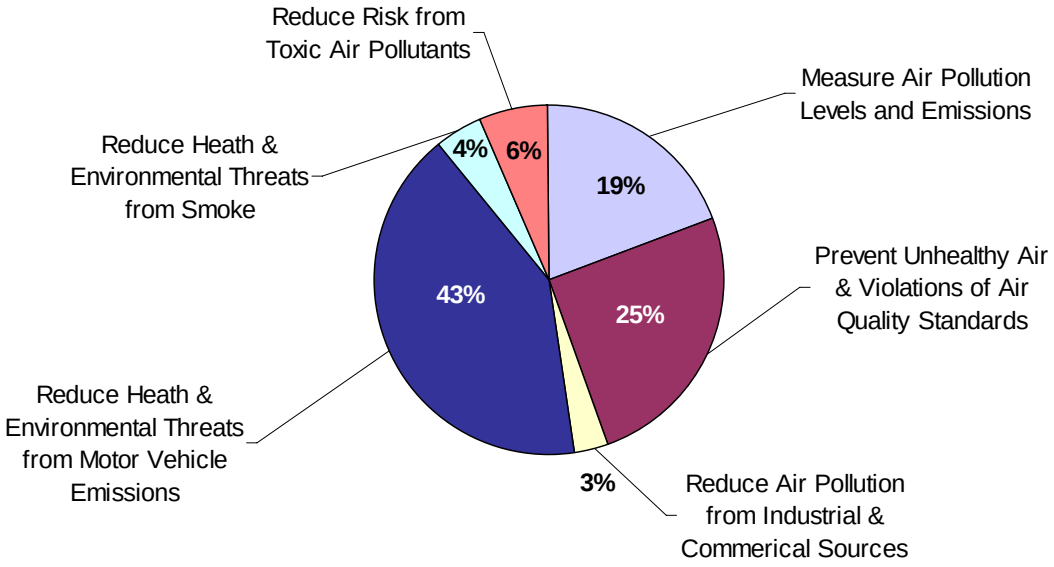
Budget = $38.6 million; FTEs = 100.9

State	($) Amount	Sources	Uses
General Fund – State	17,135,845	Multiple; vehicle emissions inspections fee	Ambient air monitoring, grants to local air authorities, new source permits, modeling and meteorology, emission inventory, vehicle emission testing.
Federal			
General Fund – Federal	9,364,894	Federal grants	State and local air authority grants for ambient air monitoring, emission inventory, modeling, meteorology, and other air quality activities. Includes special project grants.
Dedicated Funds			
General Fund – Private Local	65,016	Agreements with private entities or other governments	Activities related to reducing air pollution.
Air Operating Permit	703,338	Permit Fees collected for air contaminant sources	Issuing permits to major air pollution sources, small business technical assistance.
Air Pollution Control	10,938,835	Air registration fees; burning permit fees; vehicle transfer fees	Registration program, agricultural burning permitting, burning alternatives research; school bus retrofit program
Woodstove Education & Enforcement	336,863	Fees on the retail sale of woodstoves and fireplaces	Enforcement and education on proper woodstove use, grants to local air authorities.
Environmental Excellence	76,000	Involved entity	Activity associated with the Environmental Excellence project.
Grass Seed Burning Research	14,000	Fees on open burning of grasses grown for seed	Research on alternatives to grass seed burning.
TOTAL	**$38,634,791**		
Capital Budget Funding:			
Toxics New Appropriation	$2,000,000	Hazardous substance tax	Diesel retrofit for public-owned local government vehicles

Air Quality Dollars by Fund Source



Air Quality Program Dollars by Activity



Activity	Dollars	FTEs
Measure Air Pollution Levels for Emissions	7,479,494	25.0
Prevent Unhealthy Air and Violations of Air Quality Standards	9,725,322	13.9
Reduce Air Pollution from Industrial and Commercial Sources	1,103,338	14.0
Reduce Health and Environmental Threats from Motor Vehicle Emissions	16,135,379	27.0
Reduce Health and Environmental Threats from Smoke	1,725,692	12.0
Reduce Risk from Toxic Air Pollutants	2,465,566	9.0
Total Air Quality Program	**$38,634,791**	**100.9**